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NewsFactor Top Tech News

FCC Certifies TiVo Internet Technology



By Robin Arnfield
NewsFactor Network
August 4, 2004 6:36PM

The FCC has granted approval of TiVo's technology that permits limited sharing of recorded digital broadcast-TV shows among its subscribers. The move is an effort to pre-empt illegal online sharing of TV shows on the scale that the music, movie and software industries have seen.

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The [Federal Communications Commission](#) has voted to certify technology allowing [TiVo](#) digital-video-recorder subscribers to send copies of digital-broadcast shows over the Internet to a specified set of devices.

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The TiVo digital-output protections technology, which is one of 13 anti-piracy technologies from different companies certified by the FCC, has not yet been launched. "We are still at the concept stage with this technology," TiVo spokesperson Catherine Kelly told NewsFactor.

The TiVo system will allow subscribers to record and send a digital-broadcast TV show to up to nine other devices previously registered with TiVo. "Each device will need something like a dongle to be able to play the show," Kelly said. "You could use our system in your home, so you could watch content in players in different rooms. Or you could play back the content at your holiday cottage."

Broadcast Flag

The 13 digital-output protection technologies were approved by the FCC under the evaluative criteria established in the Digital Broadcast Content Protection Report and Order, also known as the "Broadcast Flag Order." They include [Microsoft](#) , [Sony](#) , [RealNetworks](#) and [Philips](#) Electronics.

"This order is designed to make sure that what happened in the music business, with CDs being pirated over the Internet, does not happen with digital broadcast

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TV," [Gartner](#) G2 analyst Laura Behrens told NewsFactor. "Content owners' fear of piracy has been a real barrier to the rollout of digital-TV services in the U.S."

The Broadcast Flag is an electronic signal that tells DVD recorders and other devices to encrypt shows when recording to prevent distribution over the Internet. This means that movies and sports broadcasts cannot be sent to mass audiences.




Opposing Voices

The FCC ruling was made in the face of opposition from the Motion Picture Association of America and the National Football League. However, in its unanimous ruling, the FCC said there were sufficient controls in place already to prevent piracy of digital-TV broadcast content. In a statement, the FCC says it did not adopt limits on where the content could be sent, because the proposed technologies "employ different combinations of device limits, interactive authentication and affinity-based mechanisms to restrict distribution."


The Motion Picture Association of America had expressed concerns about the risks of uncontrolled distribution of copyrighted shows, while the NFL was worried about illegal broadcasting of sports games outside authorized markets. "For the NFL, the concern was that people living in 'black-out cities,' where a football match is being held, would be able to get access to the broadcast of the game over the Web and would not need to buy tickets," Behrens told NewsFactor.

Under the agreement between the NFL and broadcasters, people living in the city where the game is being held are "blackout," so they cannot see the match on television. 











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Linux Database Hardware Spotlight



[Novell Releases Next-Gen Linux Server](#)

Novell is promising improved performance, along with greater scalability, speed and stability, with its new server software, SuSE Linux Enterprise Server 9. It is based on the next-gen Linux 2.6 kernel, which provides better power and memory management, as well as more efficient distribution of hardware resources.

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[Sun Unveils New Opteron Machines](#)

Sun has introduced a new batch of Opteron servers and workstations that run on enterprise-grade Solaris, as well as the Linux and Windows operating systems. Aggressive pricing plans are designed to bolster Sun's competitiveness in the X86 platform market.

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Sun has introduced a new batch of Opteron servers and workstations that run on enterprise-grade Solaris, as well as the Linux and Windows operating systems. Aggressive pricing plans are designed to bolster Sun's competitiveness in the X86 platform market.

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EXHIBIT B

TiVo owners could share shows online

By Jonathan Sidener
STAFF WRITER

August 5, 2004

Mission Valley resident Dominic Chenelia applauds yesterday's ruling by federal regulators that could allow TiVo owners to send copies of recorded shows over the Internet to their friends.

The Federal Communications Commission decision brings closer the day when Chenelia can use his digital video recorder to capture a National Football League clip, for example, and gloatingly e-mail it to a rival in his fantasy football league.

"I'd use a feature like that a lot," Chenelia said.

TiVo's application was opposed by the Motion Picture Association of America and the NFL. They argued that TiVo's proposed technology opens the door to widespread abuse of copyrighted television programming, just as digital recording of music led to illegal "sharing" of music files over the Internet.

Existing technologies can move copyrighted entertainment content, such as movies or TV programs, from room to room. But this is the first time the FCC has approved technology that would allow consumers to electronically send programming outside their homes by using the Internet.

The FCC ruled that TiVo has put into place sufficient safeguards to prevent mass distribution of copyrighted material.

Still, Commissioner Kevin Martin, who voted to approve the TiVo technology, cautioned that TiVo's security measures may not be strong enough.

"I ultimately want to enable a person's digital networking environment to extend beyond the home," Martin said. "I fear, however, that we may be acting prematurely."

TiVo, with 1.6 million subscribers, is the best-known developer of digital video recorder technology.

They are supercharged VCRs, recording video as digital files on a hard drive. They are generally more versatile and easier to use than VCRs.

In homes with a high-speed Internet connection, TiVos and other DVRs already use that connection to download TV schedules.

With TiVo's new technology, each TiVo will require an add-on piece of security hardware, such as a smart card, to verify that the sender and recipient are authorized to share programming, TiVo spokeswoman Kathleen Kelly said.

Under the FCC approval, Internet transmission of shared files would be restricted to copies of free programs broadcast over the airwaves and would not include paid content from cable or satellite services, Kelly said. The programs could be sent to up to nine other TiVos owned by family members or friends.

Kelly said the company has not yet designed a DVR capable of using the newly approved technology, nor is there a

timetable for the product.

The NFL and MPAA say the TiVo system would deny copyright holders control over when and where programs are broadcast.

The NFL views the ability to control regional broadcasts as critical to its television contracts and to its ability to "black out" broadcasts in cities where games have not sold out. The league does not allow local broadcasts for the home team unless the game sells out 72 hours before kickoff.

TiVo says the technology cannot be used to transmit a real-time version of a football game. A digital file of the game would only be transmitted after a game is over.

The NFL is not convinced.

"We believe this technology has the potential to transmit a game in very close to real time so it could be sold on the black market, perhaps to a sports bar in a city where the game is blacked out," said Brian McCarthy, NFL director of corporate communications.

McCarthy said the NFL and MPAA are considering a legal challenge to the FCC's decision.

The technology that TiVo asked the FCC to approve recognizes the "broadcast flag," which the agency approved in late 2003.

The flag is an electronic signal that tells digital video recorders to encrypt shows when recording. The encryption prevents widespread distribution over the Internet.

TiVo calls the new technology "remote access," but said it is not part of the TiVoToGo service that the company plans to offer this fall.

That service will let a user transfer recorded shows to a computer. It can be used by those who want to put TV shows on their laptops to take with them when they're on the road.

TiVoToGo, which sends an analog signal to the TV and computer monitor, did not require FCC approval.

In contrast, the newly approved technology will send a digital signal between TiVos. Digital files can be more easily copied and distributed on the Internet.

Also yesterday, the FCC approved a number of proposed technologies from Microsoft, Sony and others that all aim to prevent piracy by recognizing the broadcast flag.

■The Associated Press contributed to this report.

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EXHIBIT C

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Livewire: Beep! Beep! Ultra-Fast Broadband Is Here

Sat Aug 28, 2004 04:18 PM ET

By Bernhard Warner

LONDON (Reuters) - For Rainer Kinnunen, life has been a bit of a blur since he signed up for a superhigh-speed Internet service three years ago.

The 31-year-old Swedish student's computer has supplanted the television as the most vital link between his home and the outside world. He watches television shows and movies, makes phone calls, surfs the Web and plays multiplayer shoot-'em-up games through his high-speed connection -- often doing one or more activities at once.

His 10-megabit-per-second service from telecommunications company Bredbandsbolaget is up to 20 times faster than conventional cable modems, enabling a user to download a two-hour movie in a matter of minutes rather than hours.

For Kinnunen, the result has been a lifestyle change that, though not revolutionary, is certainly noticeable. "If my child wants a movie, I can download it instantly," he said. "And I haven't been to the neighborhood music store in years."

Since going superhigh-speed, Kinnunen has set up two computer servers in his apartment in the Stockholm suburb of Eskilstuna. One supplies his digital photos to friends and family. On the other, he duels it out for hours a day with other players of the "Half-Life: Day of Defeat" online war game.

And he has enough bandwidth and server space left over to broadcast his DVDs from his apartment to his friends' computers in case they want to watch along from across town.

UNITED STATES LAGGING

Bredbandsbolaget (<http://www.bredband.com/se/index.jsp>) also offers 100-megabit-per-second service for 595 Swedish crowns (\$79.49) a month in select neighborhoods where the telecom wiring is state-of-the-art. More than 1,500 households have signed up for the service, the company said.

Also in Sweden, Nordic telecommunications giant TeliaSonera (TLSN.ST: [Quote](#), [Profile](#), [Research](#)) (<http://www.teliaSonera.com>) offers an 8-megabit service that analysts refer to as multimegabit broadband. Elsewhere in Europe, Italy's e.Biscom (BISC.MI: [Quote](#), [Profile](#), [Research](#)) (<http://www.fastweb.it>) provides a similarly speedy connection.

For now, North America has missed the high-speed revolution occurring in homes across Europe, Japan and South Korea. U.S. companies like Qwest Communications International Inc. (Q.N: [Quote](#), [Profile](#), [Research](#)) (<http://pcat.qwest.com/pcat/residential.do>) are just beginning to break through the 1 megabit threshold in certain markets.

But within the next two years, multimegabit broadband will be a reality in most countries, analysts said, as telecommunications companies invest vast sums to upgrade their phone networks with high-speed chip sets and new fiber lines.

"The move to higher speeds is upon us," said analyst Graham Finnie of consultancy Yankee Group. "There's a very strong incentive for providers to offer this. As traditional broadband prices fall, the higher-speed offerings are necessary to keep margins from falling with them."

MULTIFUNCTIONALITY

For the consumer, it means one company can offer television, movies-on-demand, phone service and Web surfing, pitting smaller upstart Internet service providers against local cable companies.

"We see ourselves as an alternative to the local cable operators," said Peder Ramel, chief executive of Bredbandsbolaget. "That's our pitch."

Like its slower predecessors, multimegabit broadband services have limitations. Most notably, customers must live near -- between a quarter- and half-mile -- of the telecoms exchange point.

"Initially, this will be a service only for city dwellers," said Yankee Group's Finnie.

And, the speeds advertised refer only to downloading, the transfer of data from the Internet to a personal computer. Sending large files to others is considerably slower, but still much faster than through conventional modems.

Finally, multimegabit broadband can be twice as expensive as conventional broadband.

But prices are dropping rapidly, and demand is strong. "There are no longer any compelling technical reasons that service providers cannot push up to higher broadband speeds," Finnie said.

(\$1=7.485 Swedish crown)

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EXHIBIT D

MONDAY, AUGUST 30, 2004 **B1**

PORTALS

By LEE GOMES

Coming Soon: Movies You Rent on the Web—And Then Download

WHEN NETFLIX, the DVD-by-mail rental service, announced last week it would offer movies for download over the Internet next year, it said it was preparing itself for the day, 10 or 20 years from now, when that online downloading business would be fully developed.

It might have been closer to the mark to say 10 or 20 months. The movie business, like music and telephone service, is one of those industries the Web is quickly turning upside down and inside out.

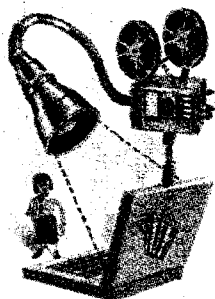
Last week, I was able to watch "The Last Samurai," "The Matrix Revolutions" and "The Italian Job" (the 1969 original with Michael Caine and Noel Coward) without ever leaving the house via my home DSL connection. I have a PC linked up to a big flat-panel TV and a home audio system. Had you been there, you probably would have thought you were watching a regular DVD.

These online rentals are in the \$3 to \$5 range. As soon as you click to get the movie, it starts downloading, and you can begin viewing it almost immediately. But to get full, DVD-style controls—reverse, fast forward, freeze frame—you have to wait for the whole movie to download, which takes an hour or two.

Of course, there aren't a lot of people with my PC-TV setup yet. Thus, the current market for movie downloads is mostly limited to airplane travelers who want to watch something on their laptops, and students, who spend all their time staring at screens anyway.

WHAT A SAD STATE the modern technology world is in. We can send a digital signal over thousands of miles, through a hopeless tangle of fiber, copper, switches and routers. Yet we can't easily send that same signal 10 more yards, from a PC in the den to a TV in the living room.

Until that changes, movie downloading will be a market waiting to happen. The good news is that solving that final-room problem is essentially a matter of flash and showmanship, of combining a few off-the-shelf pieces into a single easy-to-use product. In other words, this is a



Richard Borge

And there will be a lot of ahas. Since most people want to see a movie only once, they are perfectly happy to rent it. Paying \$5 to avoid the hassle of a trip to the video store would be a bargain at twice the price.

The current crop of Internet downloading businesses, such as Movielink and CinemaNow, all have strong ties to Hollywood studios. Their offerings are comparable to the homogeneous, mainstream mix you'd find in a big chain video store. But adding more esoteric fare should be simple because it just means loading new movies on the server. Naturally, a mature movie-download industry would be a boon to indie filmmakers without access to a Hollywood studio.

But even in the early days of these services, there are two issues about which customers need to start being cranky.

The first involves the excessively stringent antipiracy software that comes with these movies and controls how you view them. Usually, you can watch your movie only via the PC onto which you downloaded it. And while you have a month to view it, you have to finish that viewing within 24 hours of the moment you first press "Play."

HOW ABOUT, for instance, having a full weekend to watch a movie? Or being able to start watching a movie on your desktop but finish it on your laptop? (Another service, Starz! Ticket, has a monthly fee for all the movies you want, for folks who don't mind these sorts of automatic recurring charges.)

The second inalienable right of movie renters is to have the best possible video quality. DVD movies are already compressed, to squeeze as much data into as small a file as possible. The image looks a lot better than regular broadcast TV, but it's nothing close to "high definition."

The new downloadable movies are compressed even more than DVDs. While the result, as noted, isn't bad, it's fairly easy to tell the difference between different compression rates—much easier than it is with music.

Movielink is on the right track here, offering some movies at two compression levels, with the higher one giving crisper video quality but a longer download time and a bigger file. In these days of increasing broadband speeds and gargantuan disk drives, time and size are no longer major problems. Let's hope download services soon begin competing on the basis of which one has the least compressed movies.

As for how all this will change movies, start by considering Netflix. The company's current success is based in part on its fast turnaround time for rentals. But that speed is the product of an extensive bricks-and-mortar operation, with Netflix distribution centers all around the country.

In the world of online rentals, though, there is no such barrier to entry. All you need is a rack of servers and a brand name. Indeed, when Netflix said the new market wouldn't be ready for 20 years, maybe it was wishful thinking.

Send comments to lee.gomes@wsj.com. Selected letters run Friday at WSJ.com/Portals.